Service Manual

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Main board

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Panel board

Circuit diagram 3-1

Layout diagram ..... 3-2 ... 3-3

Exploded view diagram 4-1

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Nakamichi®

Product Information

General

Power Supply: 12V DC (10.5-14.4V), negative ground
Fuse: 15A
Suitable Speaker Impedance: 4 -8Ω
MP3-Link level: 800mV

Audio Section

Maximum Power Output: 50W x 4 Channels
Continous Power Output: 20W x 4 RMS
Built- in RCA for Rear Speaker

FM tuner section

Frequency Range: 87.5 -107.9MHz (USA)
87.5 - 108MHz (Europe)
87.5 - 108MHz (Latin)
87.5 - 108MHz (Middle East)
87.5 - 108MHz (ASIA)
76 - 90MHz (Japan)
87.5 - 108MHz (Australia)
87.5 - 108MHZ (Oirt FM1 & FM2)
65-74 MHZ (Oirt FM3)
Usable Sensitivity: Better than 8dB at S/N 30dB

AM tuner section

Frequency Range: 530 - 1710KHz (USA)
522 - 1620KHz (Europe)
530 - 1710KHz (Latin)
522 - 1620KHz (Middle East)
522 - 1620KHz (ASIA)
522 - 1629KHz (Japan)
522 - 1620KHz (Australia)
522 - 1620KHz (Oirt)
Usable Sensitivity: Better than 40dB at S/N 20dB

USB devices

USB Flash Memory: USB 1.1 & 2.0 Compatible

Memory Card

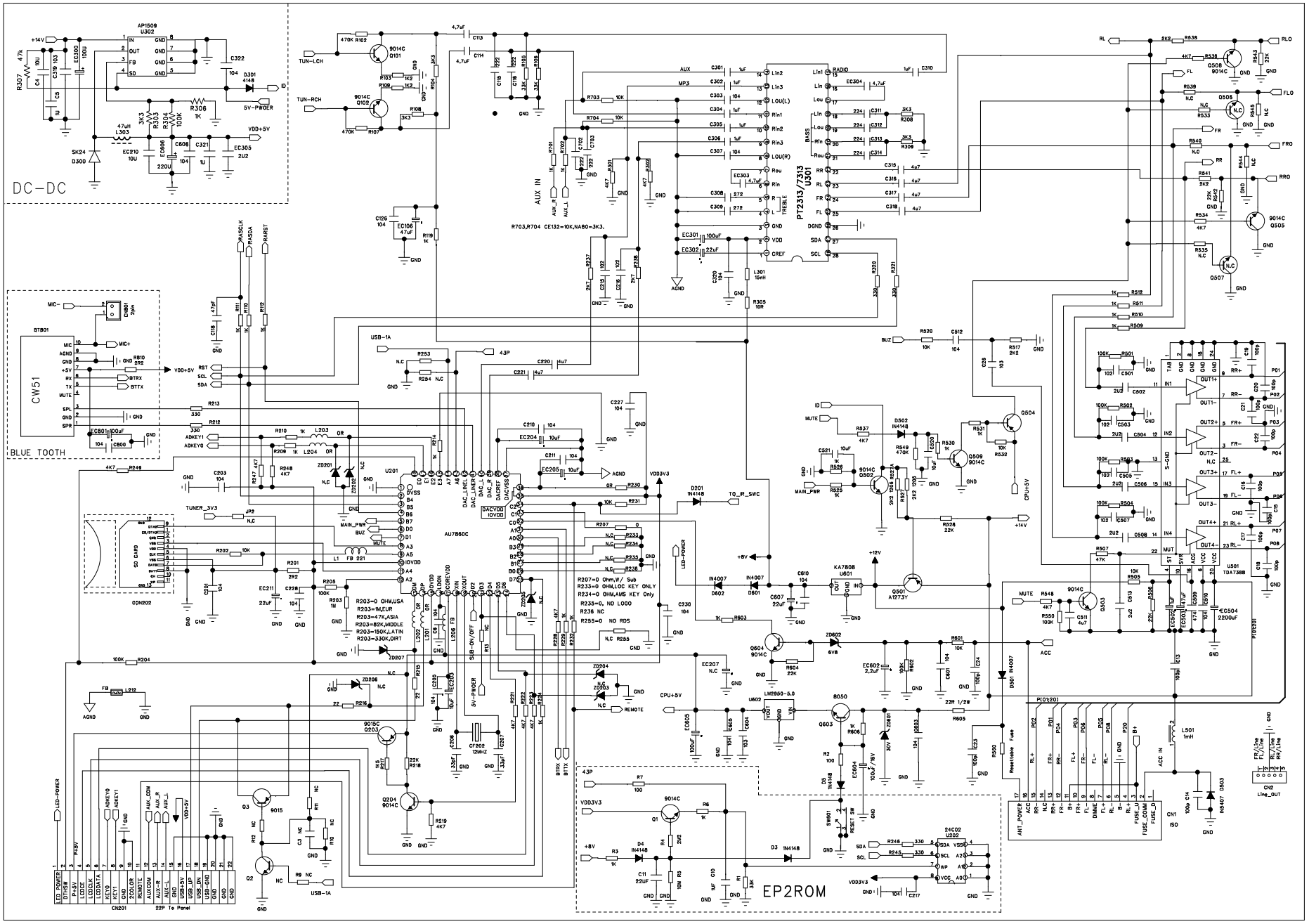
Support type of memory card: SD/SDHC

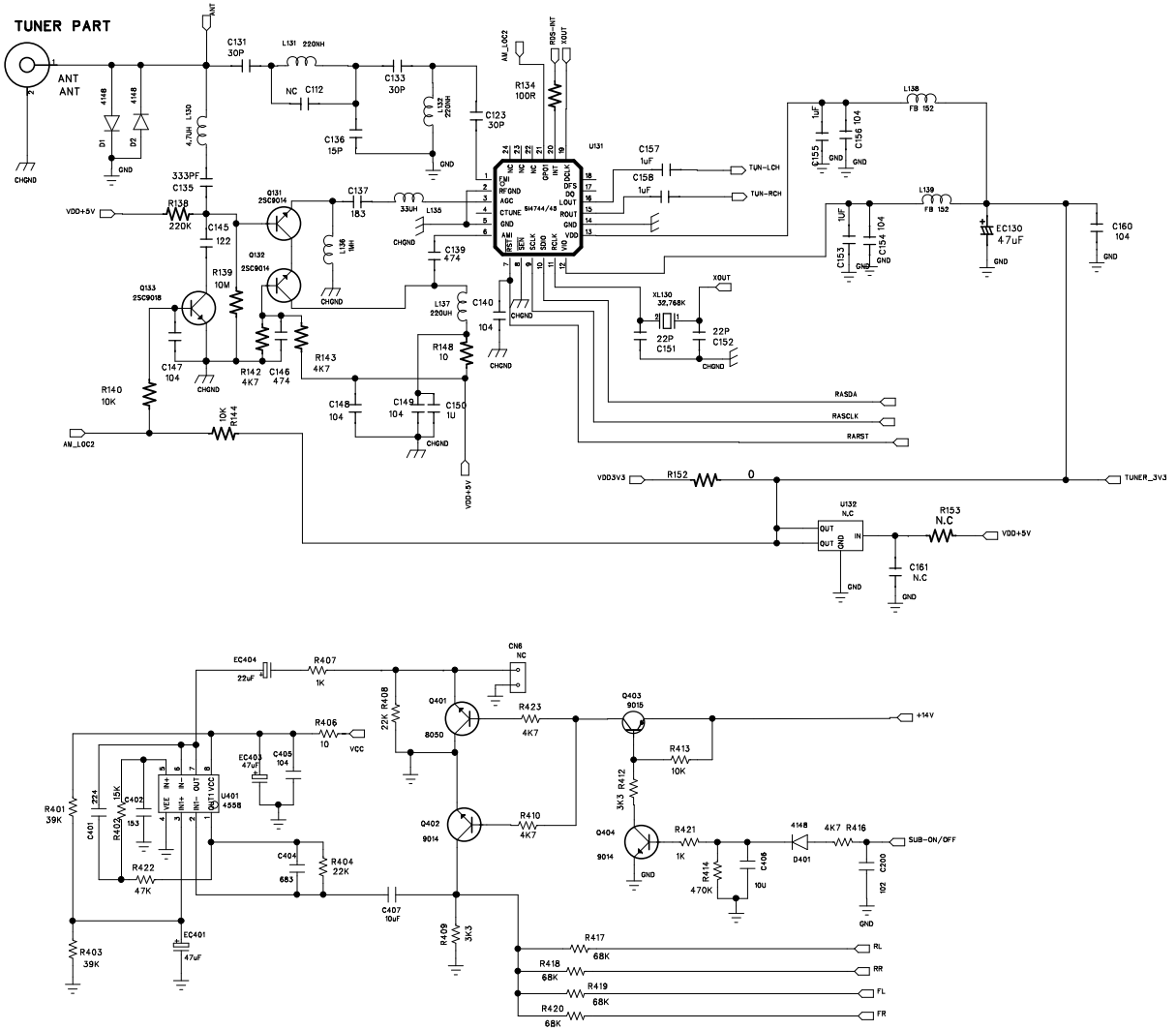
About Audio file

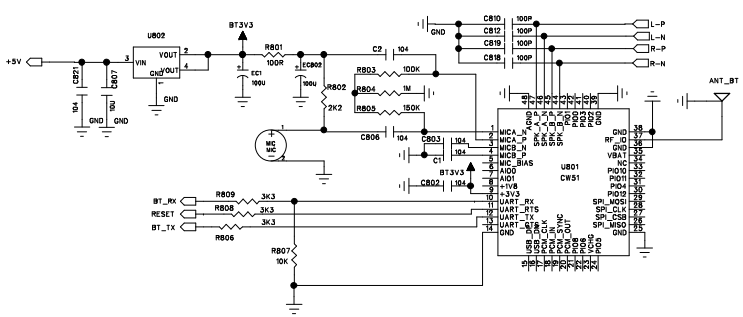
- USB or memory file system: FAT16, FAT32
- MP3/WMA bit rate: 32-320kbps and varible bit rate
- MP3 sampling frequencies: 8-48kHz
- WMA sampling frequencies: 32kHz, 44.1kHz, 48kHz
- ID3 tag v1.0 or later

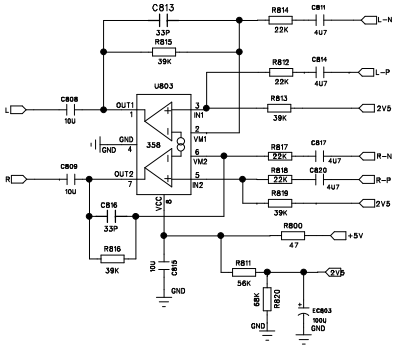
USB Smart Phone 1A charging

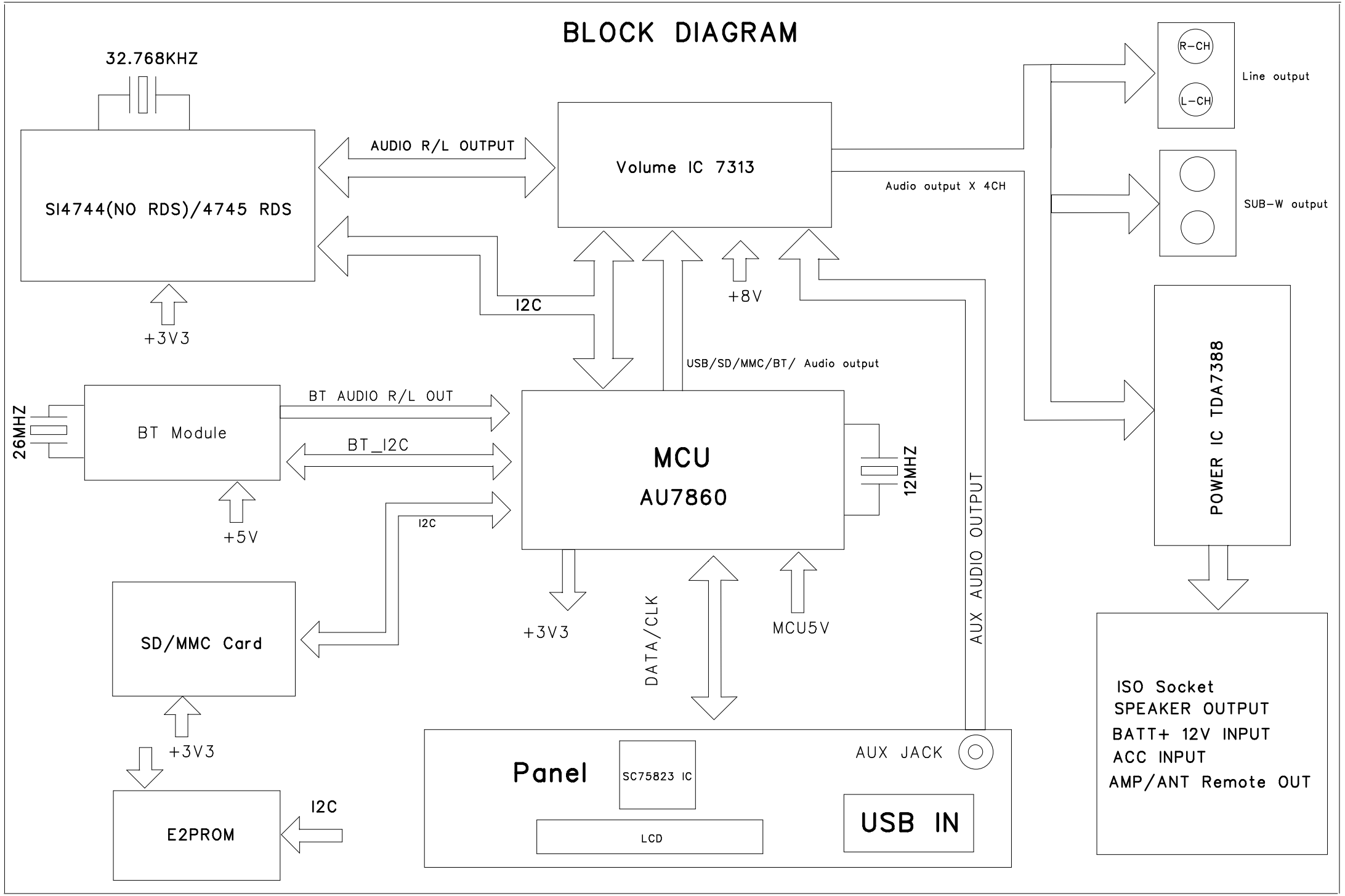
Output Voltage: 5 V DC
Output Current: 1000 mA (1A)

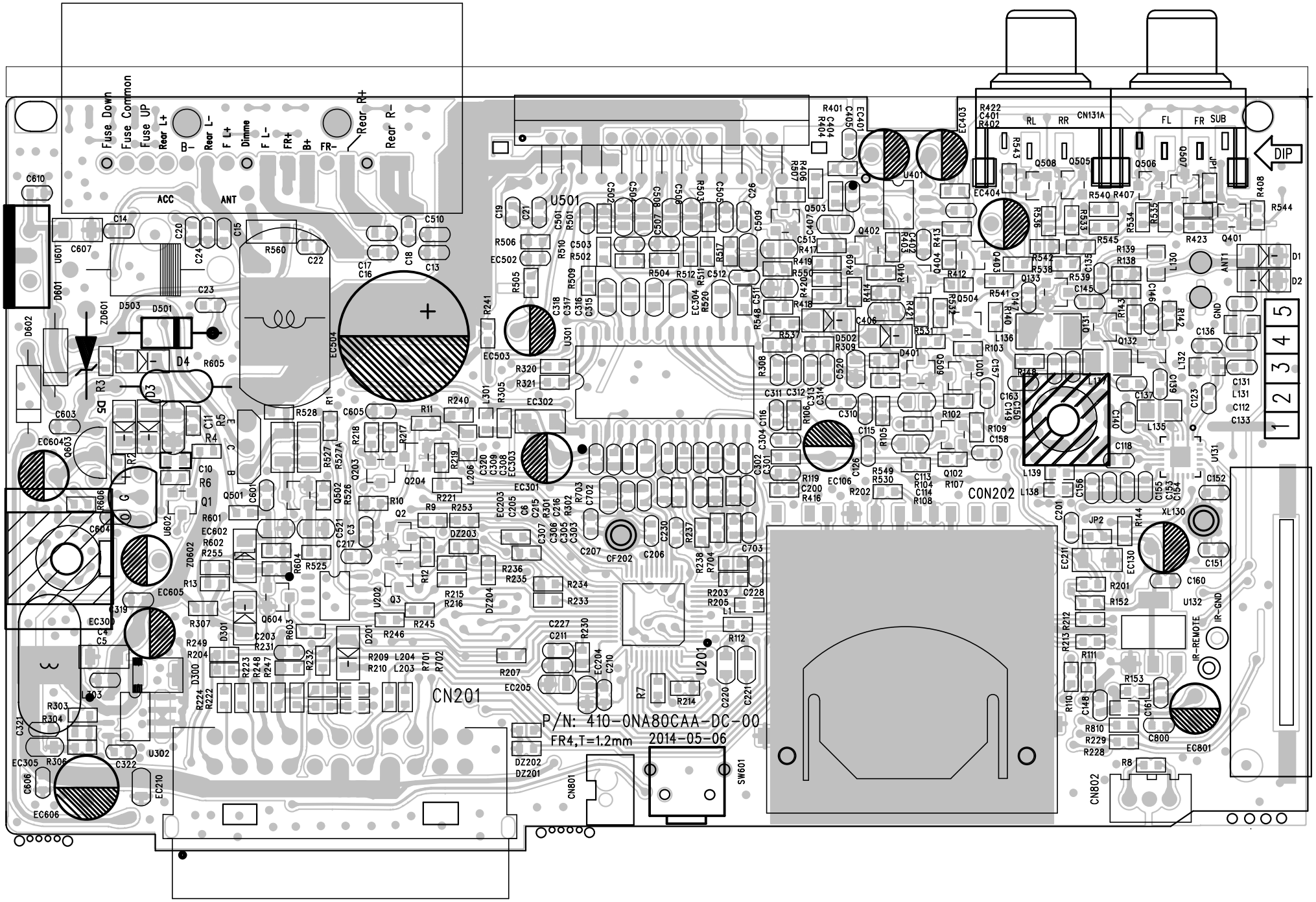

DC-DC
BLUE TOOTH
CW51
AU7860C
PT2313/7313
U501
TDA7388
EP2ROM
CN201
22P To Panel
CON202
SD CARD
CN1
ISO
CN2
Line_OUT
LED-POWER
AUX IN
TUNER_3V3
MAIN_PWR
CPU+5V
5V-PWOER
SUB-ON/OFF
LED_POWER
DTHSW
P+5V
LDDCE
LDDATA
KEY0
KEY1
GND
ZOOLOR
REMOTE
AUXCOM
AUX_R
AUX_L
VDD+5V
USB_UP
USB_DN
USB_GND
R203=0 OHM,USA
R203=1M,EUR
R203=47K,ASIA
R203=82K,MIDDLE
R203=150K,LATIN
R203=330K,DIRT
R207=0 Ohm,W/ Sub
R233=0 OHM,LOC KEY ONLY
R234=0 OHM,AMS KEY Only
R235=0, NO LOGO
R236 NC
R255=0 NO RDS
R703,R704 CE132=10K,NA80=3K3.

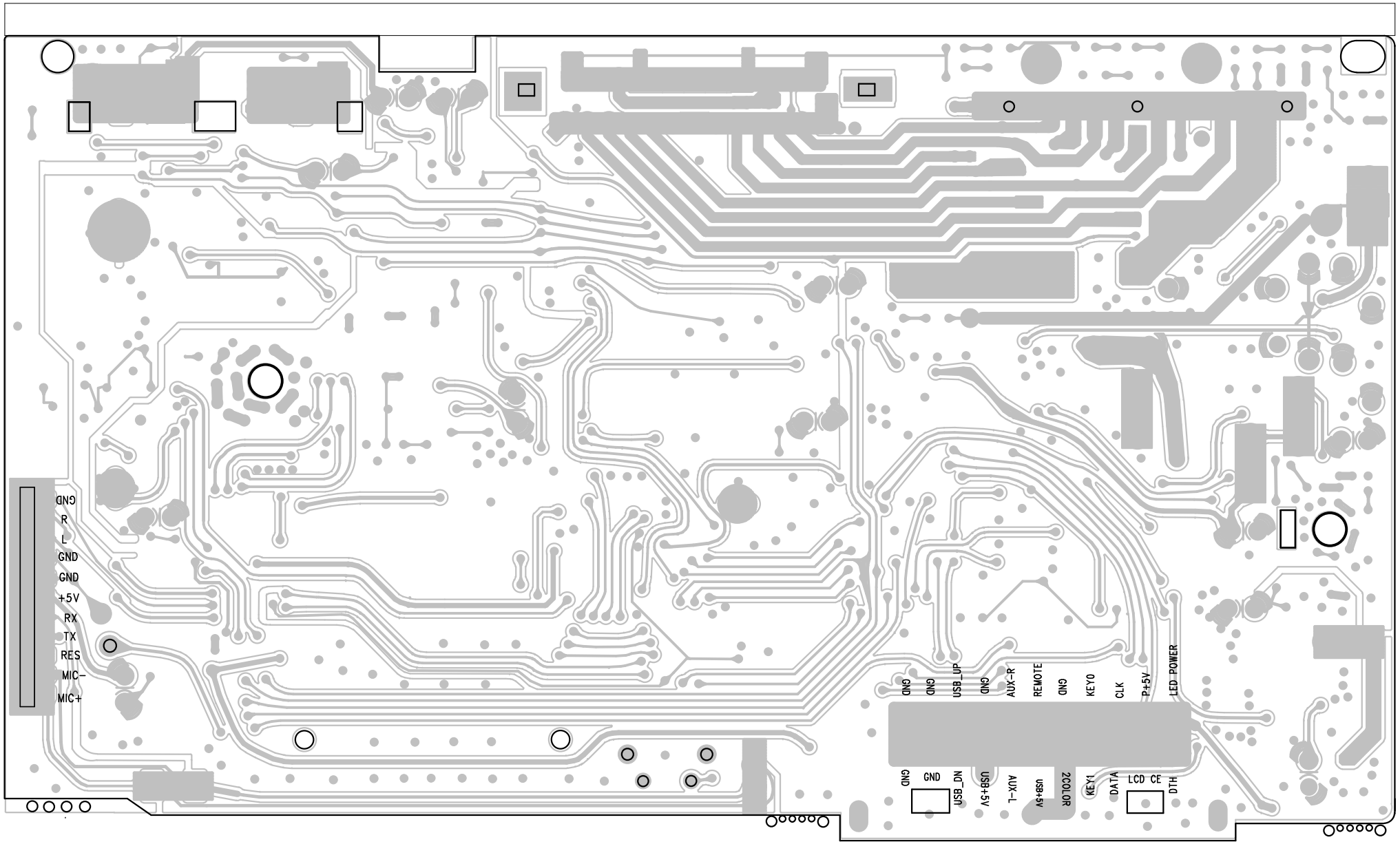

TUNER PART
ANT
ANT
C131
30P
L131 220NH
C133
30P
NC C112
C136
15P
L132
220NH
C123
30P
R134
100R
AM_LOC2
RDS-ANT
XOUT
U131
C157
1uF
C158
1uF
TUN-LCH
TUN-RCH
L138
FB 152
L139
FB 152
C155 104
C156 104
C153 1uF
C154 104
EC130
47uF
C160
104
D1
D2
4148
4148
L130
4.7UH
333PF
C135
R138
220K
VDD+5V
C145
122
Q131
2SC9014
C137
183
33UH
L135
L136
1MH
C139
474
Q132
2SC9014
R139
10M
Q133
2SC9018
L137
220UH
C140
104
XL130
32.768K
22P
C151
22P
C152
XOUT
C147
104
R142
4K7
C146
474
R143
4K7
R148
10
R140
10K
R144
10K
C148
104
C149
104
C150
1U
RASDA
RASCLK
RARST
VDD3V3
R152
0
TUNER_3V3
U132
N.C
R153
N.C
VDD+5V
C161
N.C
CN6
NC
EC404
22uF
R407
1K
Q401
8050
22K R408
R423
4K7
Q403
9015
+14V
R406
10
VCC
EC403
47uF
C405
104
R413
10K
3K3 R412
R401
39K
224
15K
C402
153
C401
R403
U401
4558
R410
4K7
Q402
9014
Q404
9014
R421
1K
4148
D401
4K7 R416
SUB-ON/OFF
C404
683
R404
22K
R414
470K
C406
10U
C200
102
R422
47K
C407
10uF
R409
3K3
EC401
47uF
R403
39K
R417
68K
R418
68K
R419
68K
R420
68K
RL
RR
FL
FR

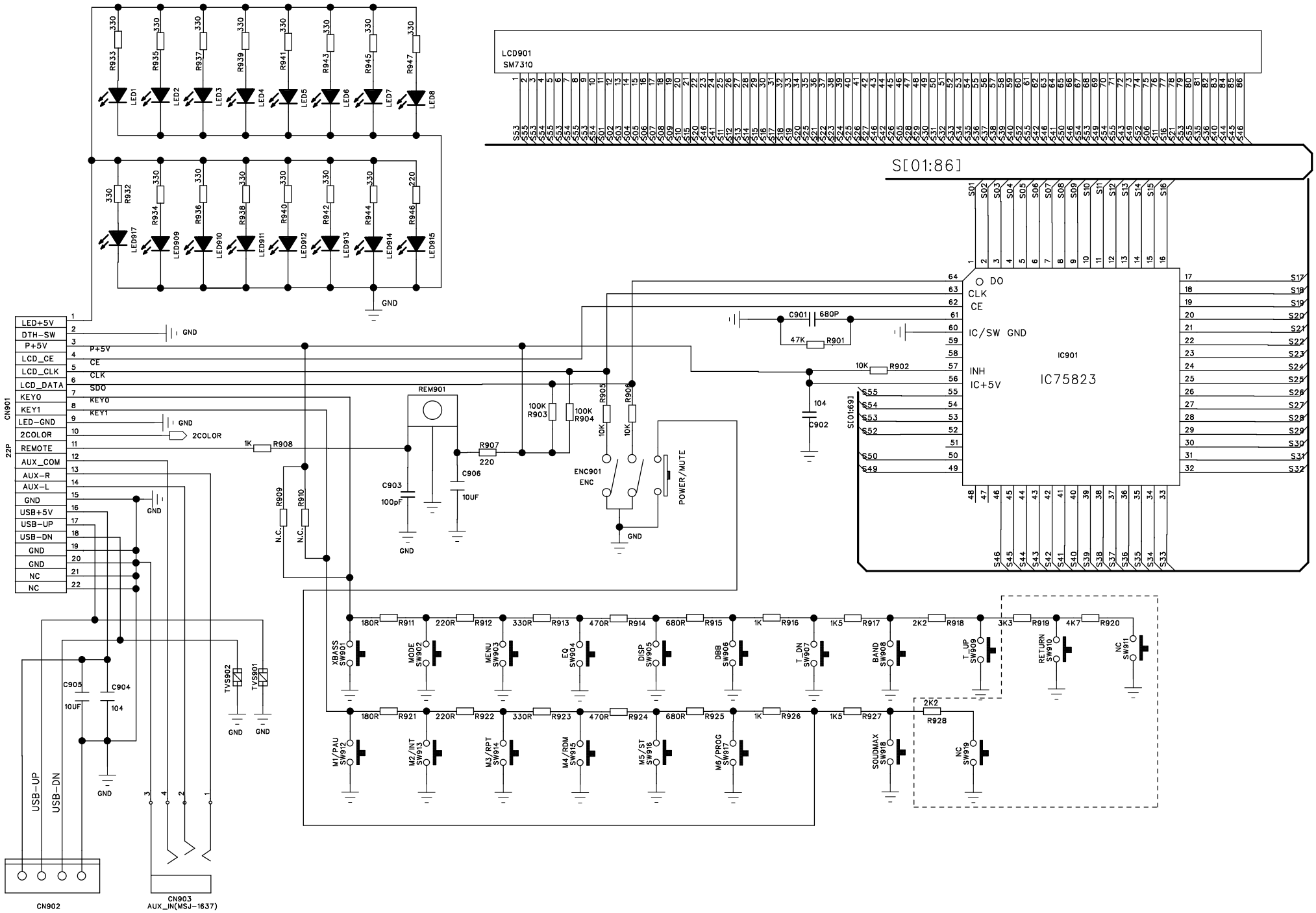

+5V
U802
VIN
VOUT
GND
BT3V3
R801
100R
EC1
100U
C2
104
R803
100K
R804
1M
R805
150K
R802
2K2
C806
C803
C1
C802
MIC
ANT_BT
C810
C812
C819
C818
100P
L-P
L-N
R-P
R-N
U801
CW51
BT_RX
RESET
BT_TX
R809
R808
R806
3K3
R807
10K


C813
33P
R815
39K
R814
22K
C811
4U7
L-N
R812
C814
L-P
U803
358
C808
10U
R813
2V5
R817
C817
R-N
R818
C820
R-P
R819
C809
C816
R816
R800
47
+5V
R811
56K
R820
C815
EC803
100U

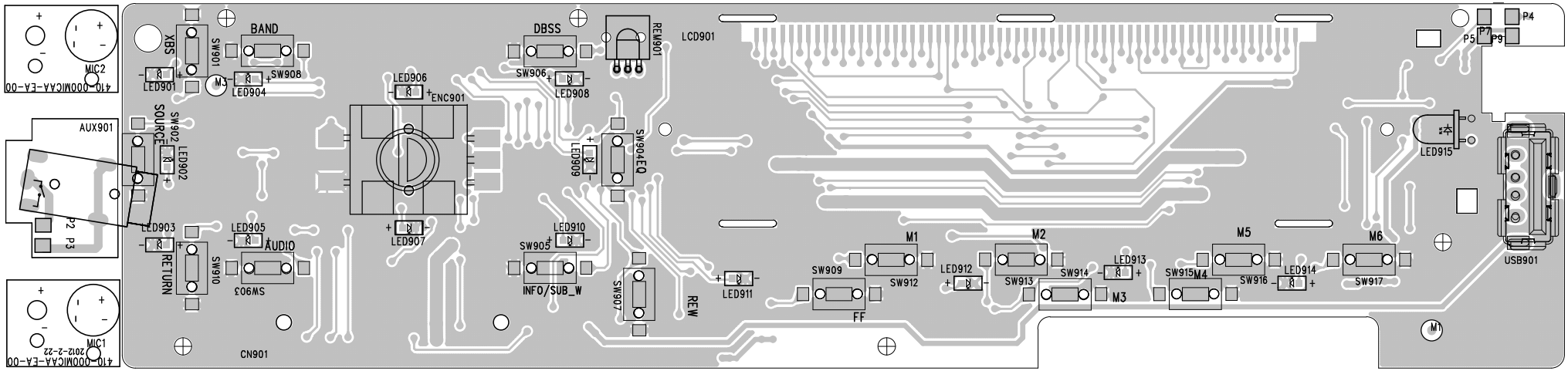

BLOCK DIAGRAM
32.768KHZ
SI4744(NO RDS)/4745 RDS
+3V3
AUDIO R/L OUTPUT
Volume IC 7313
Audio output X 4CH
R-CH
L-CH
Line output
SUB-W output
I2C
+8V
USB/SD/MMC/BT/ Audio output
POWER IC TDA7388
26MHZ
BT Module
BT AUDIO R/L OUT
BT_I2C
+5V
MCU
AU7860
12MHZ
I2C
AUX AUDIO OUTPUT
SD/MMC Card
+3V3
DATA/CLK
MCU5V
ISO Socket
SPEAKER OUTPUT
BATT+ 12V INPUT
ACC INPUT
AMP/ANT Remote OUT
+3V3
Panel
SC75823 IC
AUX JACK
USB IN
LCD
E2PROM
I2C


Fuse Down
Fuse Common
Fuse UP
Rear L+
B-
Rear L-
F L+
Dimme
F L-
FR+
B+
FR-
Rear R+
Rear R-
ACC
ANT
CN201
CON202
CN131A
RL
RR
FL
FR
SUB
DIP
P/N: 410-0NA80CAA-DC-00
FR4,T=1.2mm
2014-05-06
1
2
3
4
5

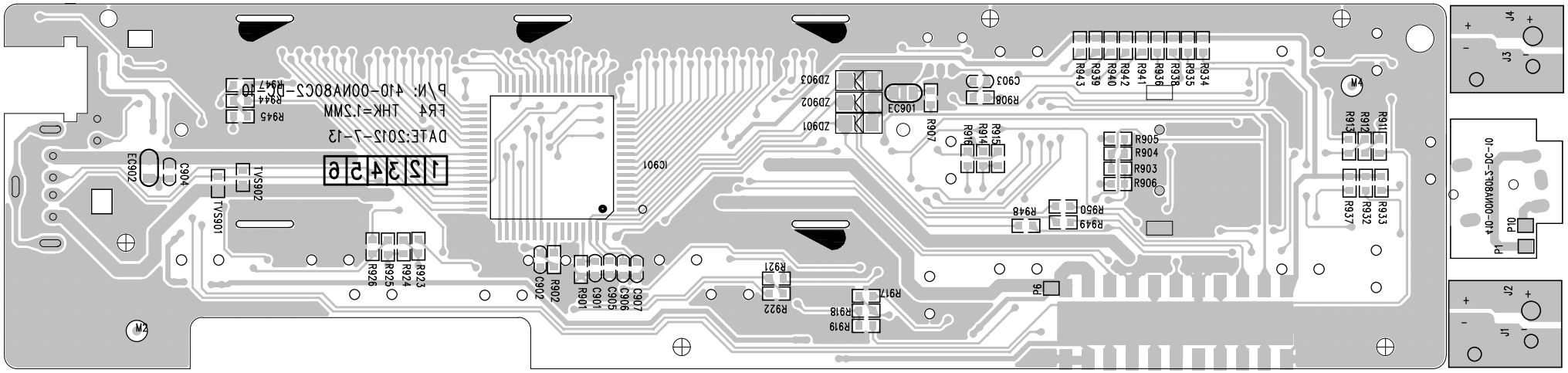

GND
R
L
GND
GND
+5V
RX
TX
RES
MIC-
MIC+
GND
GND
USB_UP
GND
AUX-R
REMOTE
GND
KEY0
CLK
P+5V
LED POWER
GND
GND
USB_DN
USB+5V
AUX-L
USB+5V
2C01QR
KEY1
DATA
LCD CE
DTH

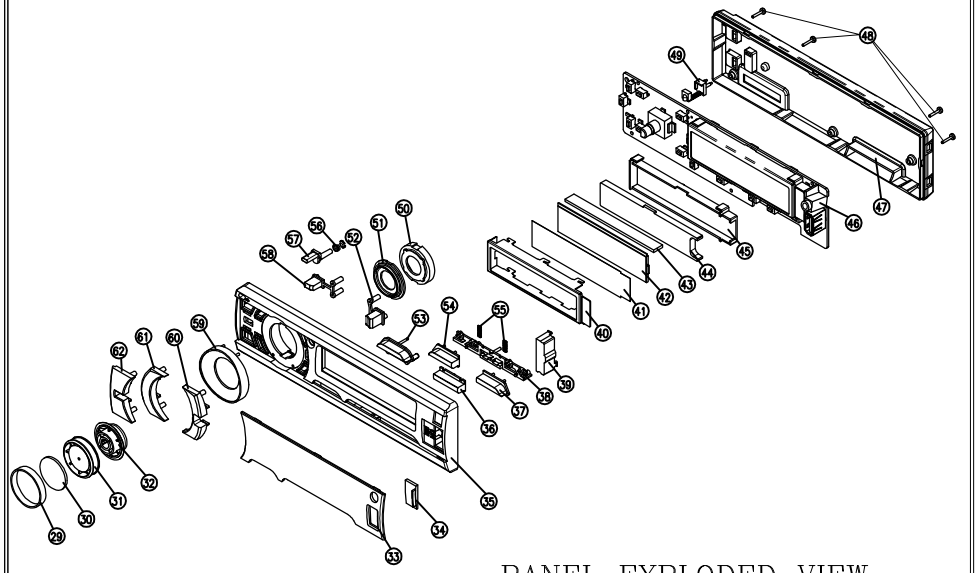

LCD901
SM7310
S[01:86]
IC901
IC75823
IC/SW GND
INH
IC+5V
CLK
CE
DO
S[01:69]
CN901
22P
LED+5V
DTH-SW
P+5V
LCD_CE
LCD_CLK
LCD_DATA
KEY0
KEY1
LED-GND
2COLOR
REMOTE
AUX_COM
AUX-R
AUX-L
GND
USB+5V
USB-UP
USB-DN
NC
REM901
ENC901
ENC
POWER/MUTE
XBASS SW901
MODE SW902
MENU SW903
EQ SW904
DISP SW905
DBB SW906
T_DN SW907
BAND SW908
T_UP SW909
RETURN SW910
NC SW911
M1/PAU SW912
M2/INT SW913
M3/RPT SW914
M4/RDM SW915
M5/ST SW916
M6/PROG SW917
SOUDMAX SW918
NC SW919
CN902
CN903
AUX_IN(MSJ-1637)
TVS902
TVS901

PANEL BOARD-LAYOUT DIAGAM

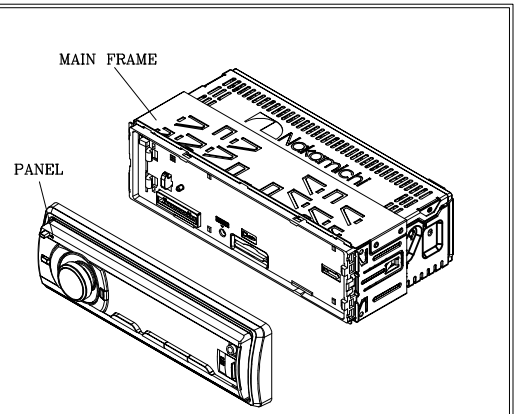


PANEL BOARD-LAYOUT DIAGAM

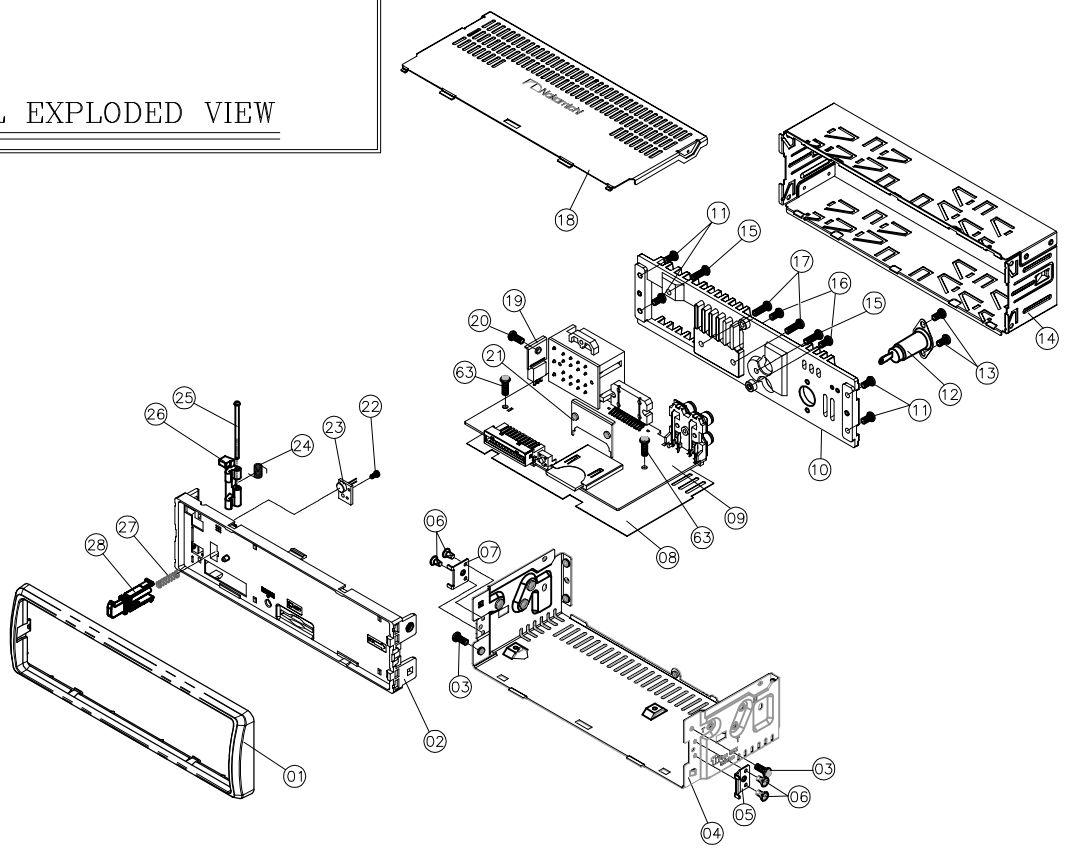




PANEL EXPLODED VIEW



DETACHABLE PANEL



MAIN FRAME EXPLODED VIEW

NO.	PART NUBER	DESCRIPTION	QTY
63	660-EBH2604B-21-00	SCREW 2.6x4	2
62	600-00NA8022-00-00	Button Left	1
61	600-00NA8019-00-00	Button Round Left	1
60	600-00NA8018-00-00	Button Round Right	1
59	600-00NA8005-00-00	Encoder Ring,ABS	1
58	600-00NA8021-00-00	Button Left Center	1
57	600-00NA8007-00-00	Button Release,ABS	1
56	650-TF620002-00-00	Compression Spring	1
55	851-00803010-10-00	Sponge Pad,black,Size:3x8x0.5mm	2
54	600-00NA8015-00-00	Button Set12	1
53	600-00NA8014-00-00	Button Bottom01	1
52	600-00NA8020-00-00	Button Right Center	1
51	600-00NA8010-00-00	Filter Ring	1
50	600-00NA8025-00-00	Reflector Encoder,PMMA	1
49	600-00NA8009-00-00	IR Holder,ABS	1
48	660-TPH17083-24-00	Screw,st1.8x8mm P/B oxid black	6
47	600-00NA8003-00-00	Rear Cabinet CDLess,PC+ABS	1
46	410-00NA80C2-DC-10	PANEL PCB	1
45	600-SM100829-00-00	LCD-HOLDER	1
44	600-SM100830-00-00	LCD-REFLECTOR	1
43	443-82008220-00-00	Zebra LCD	1
42	440-0C352470-00-00	LCD	1
41	704-CEM200001-00-00	Filter Paper	1
40	650-CEM200006-00-00	LCD Housing	1
39	600-00NA8008-00-00	LED Holder,ABS	1
38	600-00NA8013-00-00	Button Base	1
37	600-00NA8017-00-00	Button Set56	1
36	600-00NA8016-00-00	Button Set34	1
35	600-00NA8001-00-00	Front Cabinet CDLess,PC+ABS	1
34	600-00NA8012-00-00	USB Cover	1
33	600-00NA8023-00-00	Display Lens,PMMA	1
32	600-00NA8011-00-00	Knob Core	1
31	600-00NA8006-00-00	Knob Body,ABS	1
30	600-00NA8024-00-00	Knob Cover,PMMA	1
29	851-C010C004-25-00	Rubber Ring(same as NA100)	1
28	600-SM731022-00-00	Panel Pusher A, POM(Black)	1
27	650-OSM68821-00-00	Release Button Spring, WD=0.3	1
26	600-SM731021-00-00	Panel Locker, POM(Black)	1
25	650-OSM68818-00-00	Lock Shaft, A3# Steel	1
24	650-OSM68819-00-00	Lock Spring, D0.6 SUS304	1
23	410-0NA83GX-DA-00	Mic PCB	1
22	660-TPH17053-24-00	Tapping "B"Type,1.7x5 Pan Head, Philips	1
21	650-SM885A07-00-00	IC BRACKET	1
20	660-MPH30060-21-00	SCREW 3.0x6.0mm	1
19	650-000SL835-00-00	7808 IC BRACKET	1
18	650-0NA80A03-00-00	Top Cover	1
17	660-MPH30120-21-00	Machine Screw, 3x12	2
16	660-MPH26060-21-00	Machine Screw, 2.6x6	2
15	660-TPH30101-23-00	Tapping "A" Type,3x10	4
14	650-SM731013-00-00	HALF-SLEEVE	1
13	660-EPH3006B-21-00	Taptite 'S'Type, 3x6	2
12	420-00000T17-E0-00	Ant	1
11	660-EPH3008B-21-00	Taptite 'S'Type,3x8	4
10	650-0NA80A10-32-00	HEAT SINK	1
09	410-0NA80AA-DC-00	MAIN PCB	1
08	701-0NA80A01-00-00	Fibre Sheet	1
07	650-0NA80A06-00-00	Bracket Half Left For NA80A	1
06	660-ECH2004B-21-00	SCREW 2X4	4
05	650-0NA80A07-00-00	Bracket Half Right For NA80A	1
04	650-0NA80A02-00-00	MAIN BRACKET	1
03	660-EBH2605B-21-00	SCREW 2.6x5	2
02	600-0NA80A01-00-00	BASE	1
01	600-OSM68801-07-00	TRIM PLATE	1

Nakamichi®

NA82

Car Audio System Player

INSTRUCTION MANUAL

MP3 WMA USB SD AUX-IN

1A USB Universal Charge

Safety

WARNING

Stop the car before operating the unit.

Important to know...

★ To prevent a short circuit, never put or leave any metallic objects (such as coins or metal tools) inside the unit.

★ **Caution**: Adjust the volume so that you can hear sounds outside the car. Driving with the volume too high may cause an accident.

★ **Condensation:** When the car is air-conditioned, moisture may collect on the laser lens. This may cause disc read errors. In this case, remove the disc and wait for the moisture to evaporate.

★ The illustrations in this manual are examples used to explain more clearly how the controls are used. Therefore, what appears on the illustrations may differ from what appears on the actual equipment.

★ If you experience problems during installation, consult your Nakamichi dealer.

★ When you purchase external components, check with your Nakamichi dealer to make sure that they work with your model and in your area.

Maintenance

Cleaning the unit: Wipe off the dirt on the panel with a dry silicon or soft cloth. Failure to observe this precaution may result in damage to the monitor or unit.

Cleaning the connector: Wipe off dirt on the connector of the unit and faceplate. Use a cotton swab or cloth.

FCC STATEMENT

★ This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference.
(2) This device must accept any interference received, including interference that may cause undesired operation.

★ Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

★ ***Note:*** This quipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio technician for help.

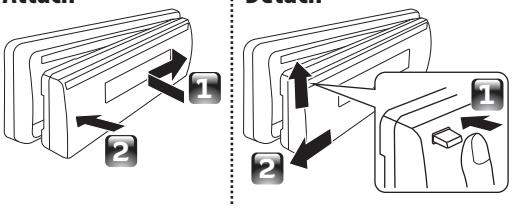
FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Preparation

How to attach/detach the faceplate

Attach **Detach**



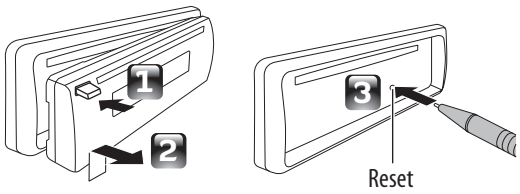
★ Do not expose the faceplate to direct sunlight, excessive heat, or humidity. Also avoid places with too much dust or the possibility of water splashing.

★ Keep the faceplate in its casing while detached.

★ The faceplate is a precision piece of equipment and can be damaged by shocks or jolts.

★ To prevent deterioration, do not touch the terminals of the unit and faceplate with your fingers.

How to reset your unit

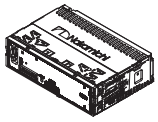


★ If this unit fails to operate properly, press the reset button.

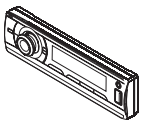
★ The unit returns to factory settings when the reset button is pressed.

What's in the box

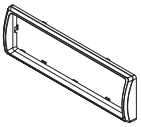
Check and identify the contents of your package:



Main unit
(with sleeve)

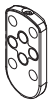


Front panel

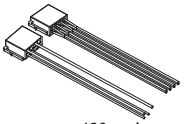


Trim plate

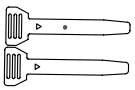
Carrying case
(for front panel)



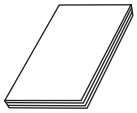
Remote
control



ISO male
connector



Disassembly tool
(2pcs)



User manual

Installation / Connection

Basic Procedure

1 Remove the key from the ignition switch, then disconnect the ⊖ terminal of the car battery.
2 Make proper input and output wire connections.
3 Install the unit to your car.
4 Reconnect the ⊖ terminal of the car battery.
5 Reset the unit.

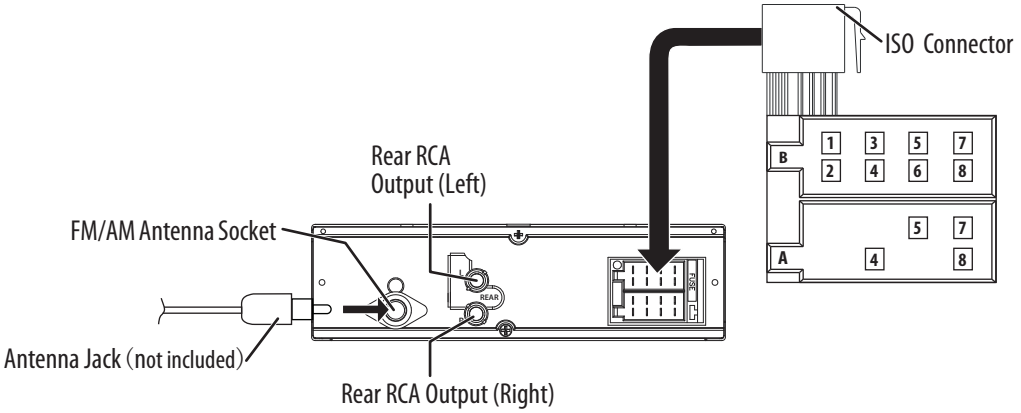
Warning

★ The unit can only be installed in a car with a 12 V DC power supply, negative ground.
★ If you connect the ignition wire (red) and the battery wire (yellow) to the car chassis (ground), you may cause a short circuit, that in turn may start a fire. Always connect those wires to the power source running through the fuse box.
★ Disconnect the battery's negative terminal and make all electrical connections before installing the unit.
★ Insulate unconnected wires with vinyl tape or other similar material. To prevent a short circuit, do not remove the caps on the ends of the unconnected wires or the terminals.
★ Be sure to ground this unit to the car's chassis again after installation.
★ If the power is not turned ON, the speaker wire may have a short-circuit or touched the chassis of the vehicle and the protection function may have been activated. Therefore, the speaker wire should be checked.

Caution

★ If your car's ignition does not have an ACC position, connect the ignition wires to a power source that can be turned on and off with the ignition key. If you connect the ignition wire to a power source with a constant voltage supply, as with battery wires, the battery may die.
★ Install this unit in the console of your vehicle. Make sure the faceplate will not hit the lid of the console (if any) when closing and opening.
★ After the unit is installed, check whether the brake lamps, blinkers, wipers, etc. on the car are working properly.
★ Mount the unit so that the mounting angle is 30° or less.
★ If the fuse blows, first make sure the wires are not touching to cause a short circuit, then replace the old fuse with one that has the same rating.
★ Connect the speaker wires correctly to the terminals to which they correspond. The unit may be damaged or fail to work if you share the ⊖ wires or ground them to any metal part in the car.
★ When only two speakers are being connected to the system, connect the connectors either to both the front output terminals or to both the rear output terminals (do not mix front and rear).
★ Mounting and wiring this product requires skills and experience. For safety's sake, leave this work to professionals.
If you experience problems during installation, consult your Nakamichi dealer.

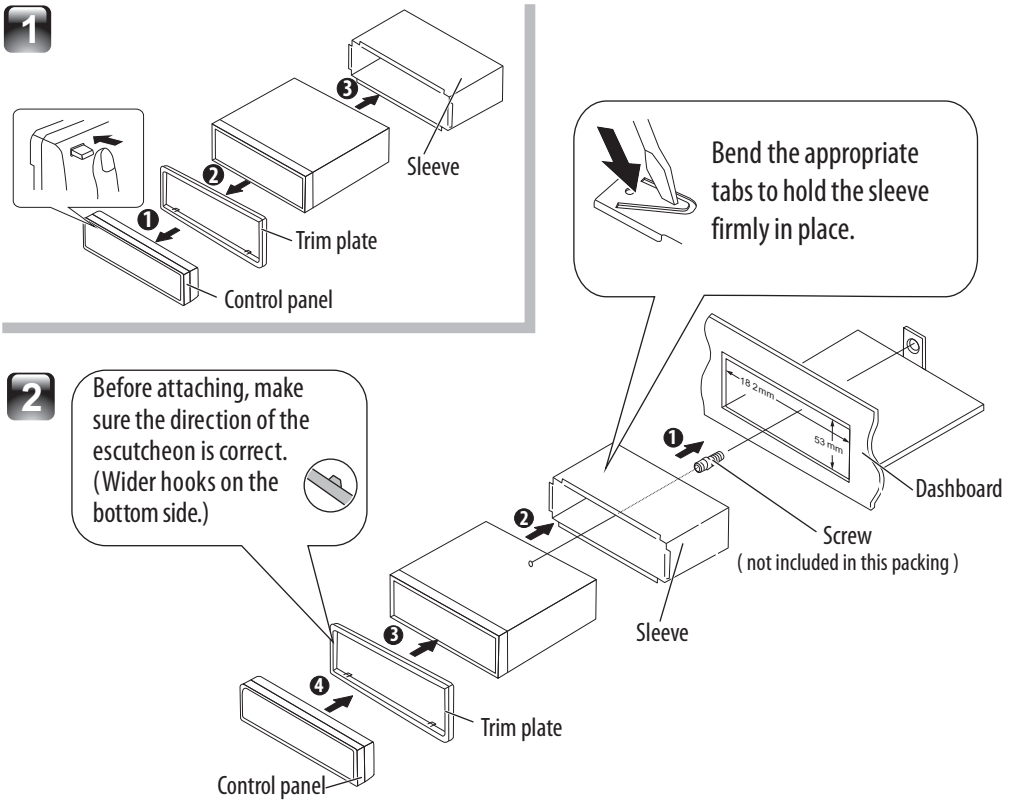
Wiring Connection



ISO Connector Wiring Chart

Pin	Color and function		Pin	Color and function	
A4	Yellow	Battery(+)	B1/B2	Violet ⊕ / Violet/Black ⊖	Right rear speaker
A5	Blue	Connect to system control terminal of the power AMP or auto antenna relaycontrol terminal(Max 150MA 12VDC)	B3/B4	Grey ⊕ / Grey/Black ⊖	Right front speaker
A7	Red	Ignition(ACC)	B5/B6	White ⊕ / White/Black ⊖	Left front speaker
A8	Black	Ground	B7/B8	Green ⊕ / Green/Black ⊖	Left rear speaker

Installing the unit

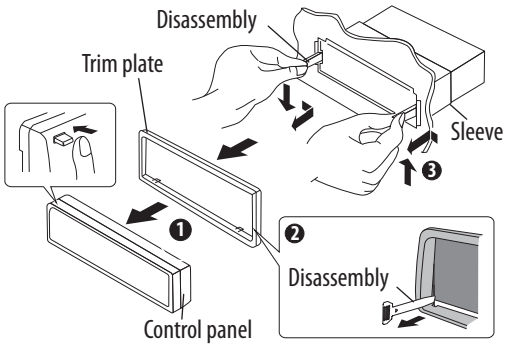


Removing the unit

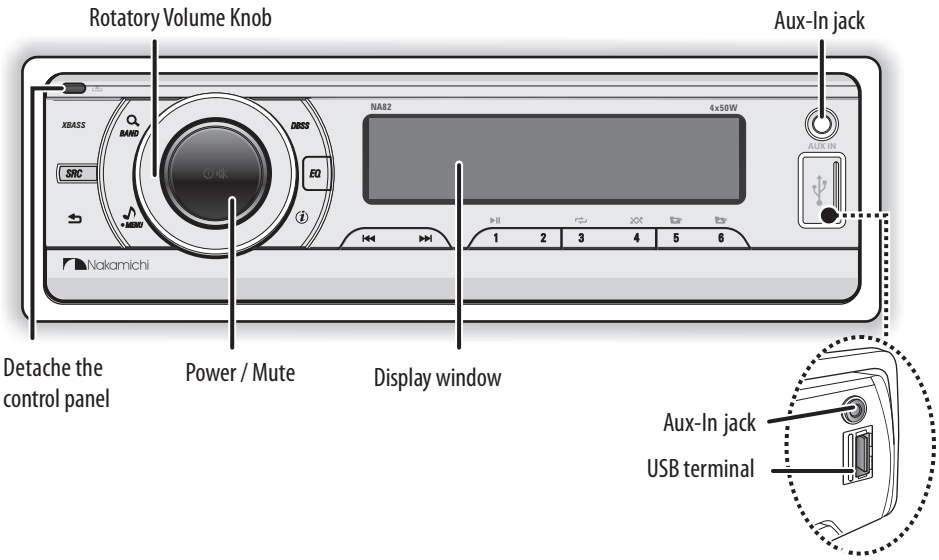
1 Detach the control panel.

2 Engage the catch pin on the removal tools into the holes on both sides of the escutcheon, then pull it out.

3 Insert the disassembly tools deeply into the slots on each side, then follow the arrows instructions as shown on the right.



Basic Operation



When you press or hold the following button(s)...

Main unit	General operation
SRC	Select the available sources (Radio, MP3-link, USB, SD), if the power is turned on.
Rotatory Volume knob	Rotate it to increase or decrease the volume.
	Select items.
⏻ 🔇 Power / Mute	■ Turn mute or restore volume. ■ Turn the unit on. Press and hold again to turn the unit off. ■ Confirms selection.
🔍 ***BAND***	■ Select the FM bands (FM1/ FM2/ FM3) or AM1 (MW1) / AM2 (Mw2). ■ Under media playback to access into search mode. ■ Press and hold to activate the Auto Store function.
1 ▶II	Pause/resumes playback of a USB / SD device.
⏮/⏭	■ Under Radio mode to enter into the Auto Seek mode, press and hold to enter into the Manual Seek mode. ■ Under Media playback mode to skip track / file, press and hold to fast forward / backward.
♪MENU	To access into the Audio Menu mode, press and hold to enter into the System Menu mode.
DBSS	Press and hold to turn On or Off dynamic bass boost sound.
ⓘ	Under Media playback mode to view play or clock informations.
XBASS	Turn On or Off the Xbass bosster function.
EQ	To adjust the EQ (Preset Equalizer) setting.
⮌	■ Returns to the previous item.

Function Setting

1 Press ♪ ***MENU*** to access into the **[AUDIO MENU]** mode, press and hold to enter into the **[MENU]** mode.

2 Press **[MENU]** repeatedly to select the item to be adjusted.

3 Turn the encoder volume knob to select a value / option.

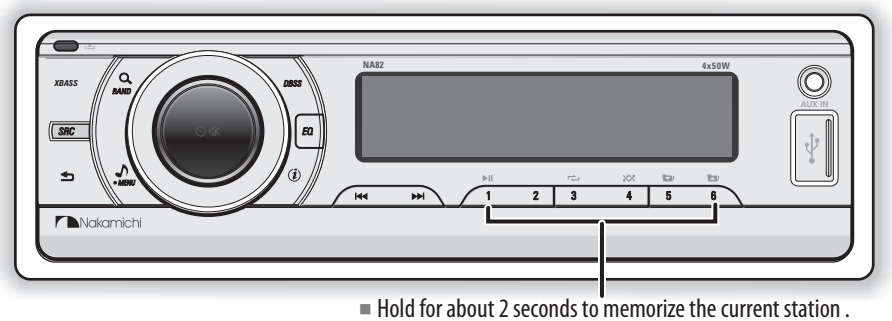
[AUDIO MENU]...

Item	Selectable Setting
BASS ADJUST	
BASS LEVEL	Adjust the level -7 to +7.
TREBLE ADJUST	
TREBLE LEVEL	Adjust the level -7 to +7.
BALANCE	Adjust the balance between the right and left speakers from 10R (full right) to 10L (full left).
FADER	Adjust the fader between the front and rear speakers from 10R (full rear) to 10F (full front).

[MENU]...

Item	Selectable Setting
CLOCK	
CLOCK SET	Adjust the Hours and Minutes
CLOCK FORMAT	Select the time format 12H or 24H
BEEP TONE	Turn On or Off this beep sound

Listening to the Radio



- Hold for about 2 seconds to memorize the current station .
- Press briefly to recall memorized station.

1 Press ***BAND*** repeatedly to a band (FM1, FM2, FM3, AM1(MW1) or AM2 (MW2) .

2 Press ⏮/⏭ to search for a station.

Adjust [MENU] mode setting

While listening to the radio...

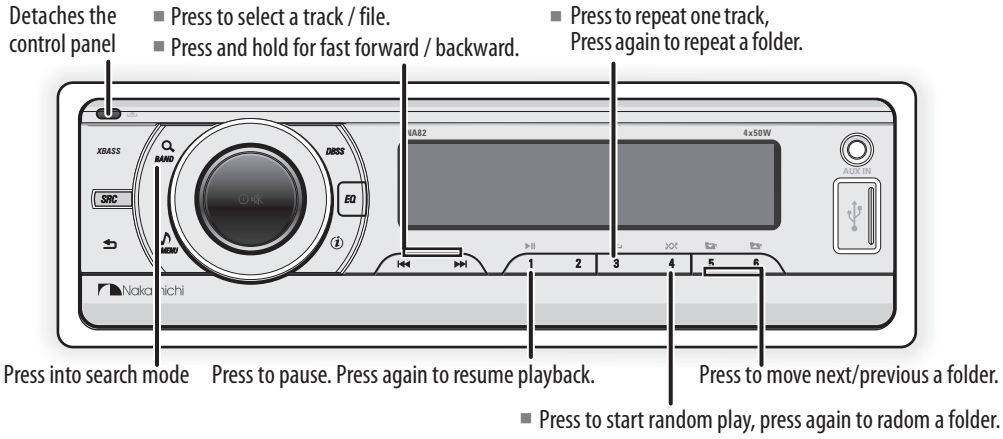
1 Press and hold ***MENU*** to enter into the **[MENU]** mode.

2 Press **[MENU]** repeatedly to select the item to be adjusted.

3 Turn the encoder volume knob to select a value / option.

Item	Selectable Setting
LOC ON/OFF	To receive more radio stations or only stations with strong signal, you can adjust the radio sensitivity.
STORE ↵	Press the ⏻ to access into Auto Store mode, the six strongest stations of the selected band are saved in preset channel automatically: FM1, FM2, FM3(1-6), AM1, AM2.
AREA	Select suitable country region of the radio: USA; LATIN; EUROPE; RUSSIA(Oirt); M-EAST; ASIA; JAPAN; AUST (Australia)

Listening to a USB/SD device

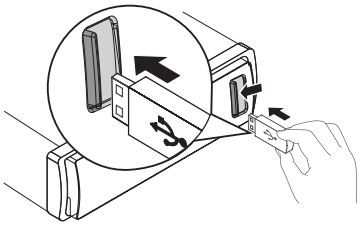

Detaches the control panel
Press to select a track / file.
Press and hold for fast forward / backward.
Press to repeat one track,
Press again to repeat a folder.
Press into search mode
Press to pause. Press again to resume playback.
Press to move next/previous a folder.
Press to start random play, press again to radom a folder.

Playing a USB device

1 Slide the USB socket cover market ⇢ to the left.

2 Insert the USB device into the USB socket.

3 Press the "SRC" button to select the USB mode to start playing.



Playing a SD memory card

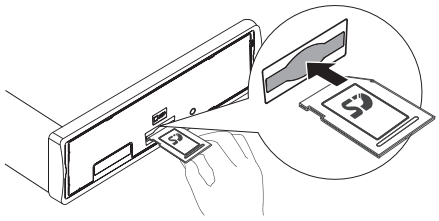
1 Press the Panel ⏏ (Release) button.

2 Push the left side of the panel rightward

3 Insert the card into the card slot.

4 Close the front panel.

5 Press the "SRC" button to select the SD mode to start playing.

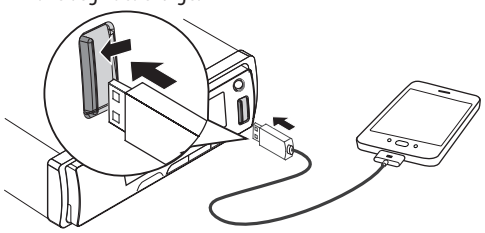


1A USB Universal Charge

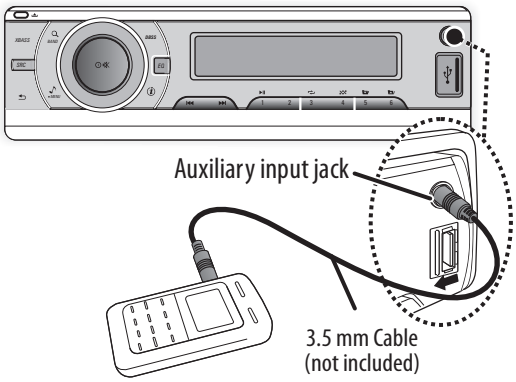
1 Slide the USB socket to left.

2 Insert the Smart Phone device into the USB socket.

3 Once the Smart Phone is connected and recognized, the Smart Phone begins to charge.



Listening to the other external components



1 Press the **SRC** to select AUX-IN mode.

2 Turn on the external component and start playing.

Remote Control Operation

When you press or hold the following button(s)...

Main unit	General operation
🔇	Turn mute or restore volume.
⏻	Press turn the unit on or off.
VOL +	Press increase the volume.
− VOL	Press decrease the volume.
⏮/⏭	■ Under Radio mode to enter into the Auto Seek mode, press and hold to enter into the Manual Seek mode. ■ Under Media playback mode to skip track / file, press and hold to fast forward / backward.
SRC	Select the available sources (Radio, USB, SD or Aux-In), if the power is turned on.
AUDIO	Press to access into the Audio Menu mode.

Product Information

General

Power Supply: 12V DC (10.5-14.4V), negative ground
Fuse: 15A
Suitable Speaker Impedance: 4 -8Ω
MP3-Link level: 800mV

Audio Section

Maximum Power Output: 50W x 4 Channels
Continous Power Output: 20W x 4 RMS
Built- in RCA for Rear Speaker

FM tuner section

Frequency Range: 87.5 -107.9MHz (USA)
87.5 - 108MHz (Europe)
87.5 - 108MHz (Latin)
87.5 - 108MHz (Middle East)
87.5 - 108MHz (ASIA)
76 - 90MHz (Japan)
87.5 - 108MHz (Australia)
87.5 - 108MHZ (Oirt FM1 & FM2)
65-74 MHZ (Oirt FM3)
Usable Sensitivity: Better than 8dB at S/N 30dB

AM tuner section

Frequency Range: 530 - 1710KHz (USA)
522 - 1620KHz (Europe)
530 - 1710KHz (Latin)
522 - 1620KHz (Middle East)
522 - 1620KHz (ASIA)
522 - 1629KHz (Japan)
522 - 1620KHz (Australia)
522 - 1620KHz (Oirt)
Usable Sensitivity: Better than 40dB at S/N 20dB

USB devices

USB Flash Memory: USB 1.1 & 2.0 Compatible

Memory Card

Support type of memory card: SD/SDHC

About Audio file

- USB or memory file system: FAT16, FAT32
- MP3/WMA bit rate: 32-320kbps and varible bit rate
- MP3 sampling frequencies: 8-48kHz
- WMA sampling frequencies: 32kHz, 44.1kHz, 48kHz
- ID3 tag v1.0 or later

USB Smart Phone 1A charging

Output Voltage: 5 V DC
Output Current: 1000 mA (1A)

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